

ABSTRACT OF THE DISCLOSURE

A magnetic resonance apparatus has a coil arrangement to generate a magnetic gradient field in an imaging volume and an electrically-conductive structure that at least partially surrounds the coil arrangement and in which, given a temporally changing current flow in the coil arrangement, eddy currents are caused that produce an eddy current field interfering with the gradient field within the imaging volume. For eddy current compensation the coil arrangement has at least two conductor sections from the group of: a first conductor section that contributes to the generation of the gradient field, and that additionally generates via the electrically-conductive structure a first interference factor in the form of a first eddy current field in the imaging volume, a second conductor section that contributes both to the generation of the gradient field, thereby generating via the electrically-conductive structure a second interference factor in the form of a second eddy current field in the imaging volume, and that generates a field compensating the first eddy current field, and a third conductor section that contributes exclusively to the compensation of interference factors in the form of an eddy current field. One of the conductor sections contributing to the compensation of interference factors is spaced, relative to the imaging volume, at less than or equal to the distance of one of the conductor sections contributing to the gradient field.

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